Decision Automation on IBM System z with IBM WebSphere Operation Decision Management V7.5

IBM Redbooks Solution Guide

Organizations today have their core business processes automated in application systems that were developed over the course of years or even decades, making the applications difficult to comprehend. As these software assets mature, they tend to become even more complex. This complexity can impede an organization's ability to respond quickly to contemporary business challenges, which require agile processes. Adopting Operational Decision Management capabilities (a combination of business rules and business events) can simplify the maintenance and modernization of the organization's existing assets, such as IBM CICS® and batch COBOL applications, making processes more agile and responsive. The various aspects of decision management are illustrated in Figure 1.
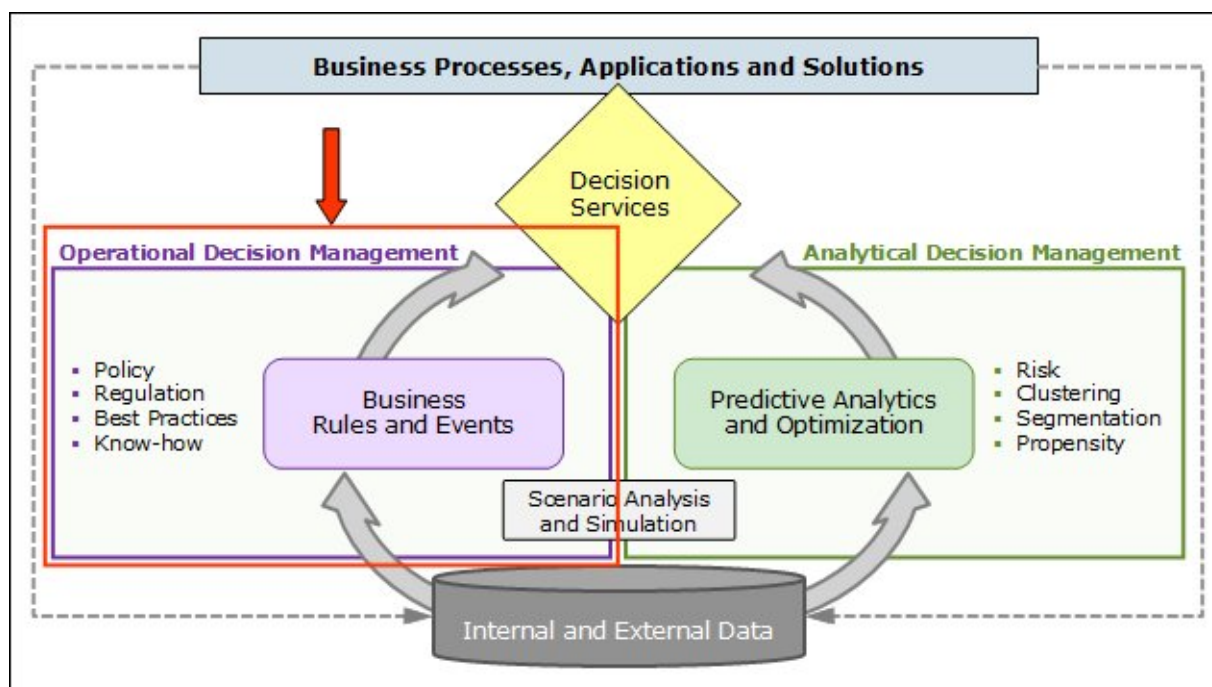

Figure 1. What is decision management

Did you know?

Decision management is emerging as an important capability for delivering agile business solutions. Decision management is a tool to help corporations accelerate their reaction to the growing complexity of business changes.

Business value

Organizations embark on application modernization projects to focus on how their core IBM System z® business applications can respond rapidly to emerging opportunities. To manage agile solution delivery, it is essential to be able to understand these business applications in terms of the business decisions they implement and the effect of decision changes on key business processes.

Organizations can rapidly and efficiently advance into their application modernization projects by incrementally externalizing their business decisions from COBOL applications and moving them into a decision management system. Most companies begin using Operational Decision Management with one or possibly two business decisions at a time. Examples are deciding when to reorder products in a specific region and identifying the eligibility of a new customer. Taking an incremental approach with decision management in core business applications provides organizations with a return on investment (ROI) in the first phase of their projects. An incremental approach avoids embarking on a lengthy, labor-intensive "rip and replace" project. An incremental approach also enables the team to understand the design and management techniques of decision management.

Operational Decision Management combines the authoring, testing, and management of business rules and business events that are required for implementing business decisions. Operational Decision Management enables organizations to adapt incrementally the business decisions in their System z while avoiding lengthy application development cycles.

Operational Decision Management offers these features:

- A set of tools for business users, administrators, and developers to edit and manage rules
- A powerful decision engine to execute business decisions
- A robust decision repository to tie everything together
- An extensive library to define and extend the decision execution and management environment

Applying Operational Decision Management to application modernization projects can incrementally address projects in the following areas:

- Effective application maintenance: IBM z/OS® development teams generally need to address a long list of maintenance projects for their core COBOL business applications. If a maintenance project requires updates to the decisions that are implemented in a specific application (for example, calculating preferred customer discounts or determining credit fraud), redesigning those rules in Operational Decision Management will enhance ongoing management.

- Consolidating or restructuring existing applications: Most organizations have duplicate functionality in multiple applications, which raises the cost and effort required to maintain the applications and make changes to them. Consolidation can combine the same functionality into a core business application and eliminate costly redundancy. Incorporating Operational Decision Management technology into those modernization projects centralizes the business decisions into one source for ease of change and management.

- Sharing business decisions across applications and platforms. This is an effective way to obtain a higher ROI. WebSphere Operational Decision Management for z/OS provides the tooling to design business decisions for your COBOL applications that can be reused or shared for execution in Java applications on z/OS or distributed platforms.

Solution overview

The IBM WebSphere Operational Decision Management product family provides value to organizations that want to improve the responsiveness and precision of automated decisions on z/OS and distributed applications. On z/OS, this decision management platform provides comprehensive automation and governance of the operational decisions that are made within mainframe applications.

WebSphere Operational Decision Management V7.5 for z/OS consists of two components, illustrated in Figure 2, which together form a platform for the management and execution of business rules and event rules.
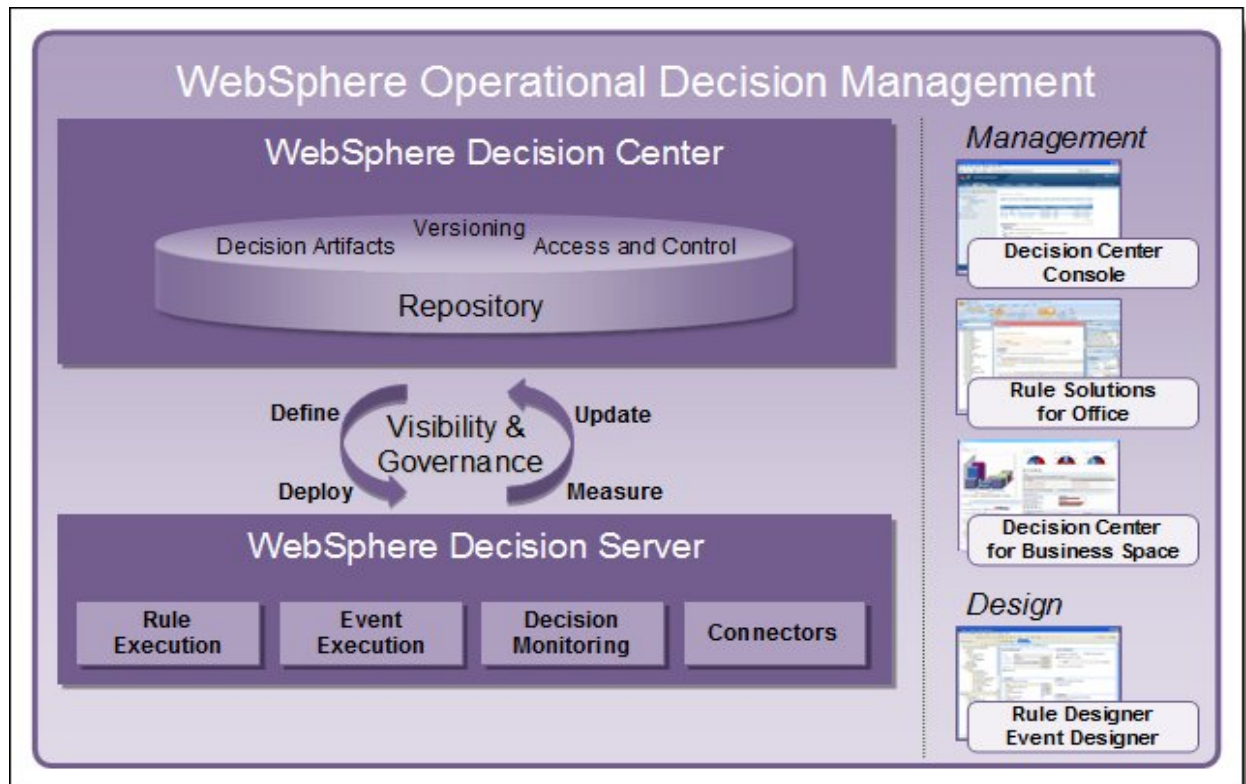

Figure 2. WebSphere Operational Decision Management V7.5 for z/OS

The two components of the solution are:

- IBM WebSphere Decision Center for z/OS provides an integrated repository and management components for line-of-business (LOB) SMEs to directly participate in the governance of business rule-based and business event-based decision logic. Through the capabilities of WebSphere Decision Center, business and IT functions can work collaboratively. They align the entire organization in the implementation of automated decisions and accelerate the maintenance lifecycle as they evolve, based on new external and internal requirements.

  Decision Center provides these features:

  - Comprehensive decision governance, including role-based security, custom metadata, multiple branch release management, non-technical testing and simulation, and historical reporting
  - Team collaboration through multiple user access for business users and integrated synchronization between IT and business user environments

Decision Center packaging includes these environments and tools:

- Decision Center console
- Decision Center repository
- Decision Center for Business Space
- Rule Solution for Office

- IBM WebSphere Decision Server for z/OS provides the runtime components to automate event- and rule-based decision logic on mainframe systems. This product enables the detection of actionable business situations and the response of precise decisions based on the context of each interaction.

  With WebSphere Decision Server for z/OS, an organization can monitor a business network to discover and act on event-based data patterns. Then, the organization can process this information against hundreds or even thousands of business rules to determine how to respond within both front-end and back-end systems.

  This product includes these components:

  - Specific run times

    These run times are designed to handle the unique aspects of business rule and business event execution. For business rule execution, this product offers several mainframe runtime options. These options allow development teams to choose a deployment strategy that best fits their mainframe applications and architecture.

  - Eclipse-based development tooling

    Rule Designer and Event Designer provide application development environments, sharing a similar high-level approach and technology.

Solution architecture

WebSphere Operational Decision Management V7.5 for z/OS delivers the decision management features and applies them on mainframes. WebSphere Operational Decision Management V7.5 for z/OS includes these products and modules:

- Rule Designer is used as the starting point to create the model on which to author the business rules. Rule Designer is the Eclipse-based development toolkit for business rules. It is installed on a workstation.

- Event Designer is used as an entry point to develop event rules. It consists of the Eclipse-based development toolkit for event rules and is installed on a workstation.

- Decision Center is used as the team repository to govern the business rules and event rules, and to author them through a web interface. Decision Center runs on WebSphere Application Server on z/OS, Linux for System z, or a distributed environment.

- Decision Server run times are split into two types:
  - For Business rules, three approaches are possible: zRule Execution Server for z/OS, Rule Execution Server running on WebSphere Application Server on z/OS, or COBOL source generation. The core runtime stack is common across Rule Execution Server and zRule Execution Server for z/OS, which share the rule engine. zRule Execution Server for z/OS is a runtime solution to manage and operate decision services that are invoked from COBOL applications running in batch and CICS on z/OS.

  - For Event rules, there is a run time on WebSphere Application Server on z/OS to process business events.

Figure 3 shows the relationships among the various modules and the separation between development and execution.
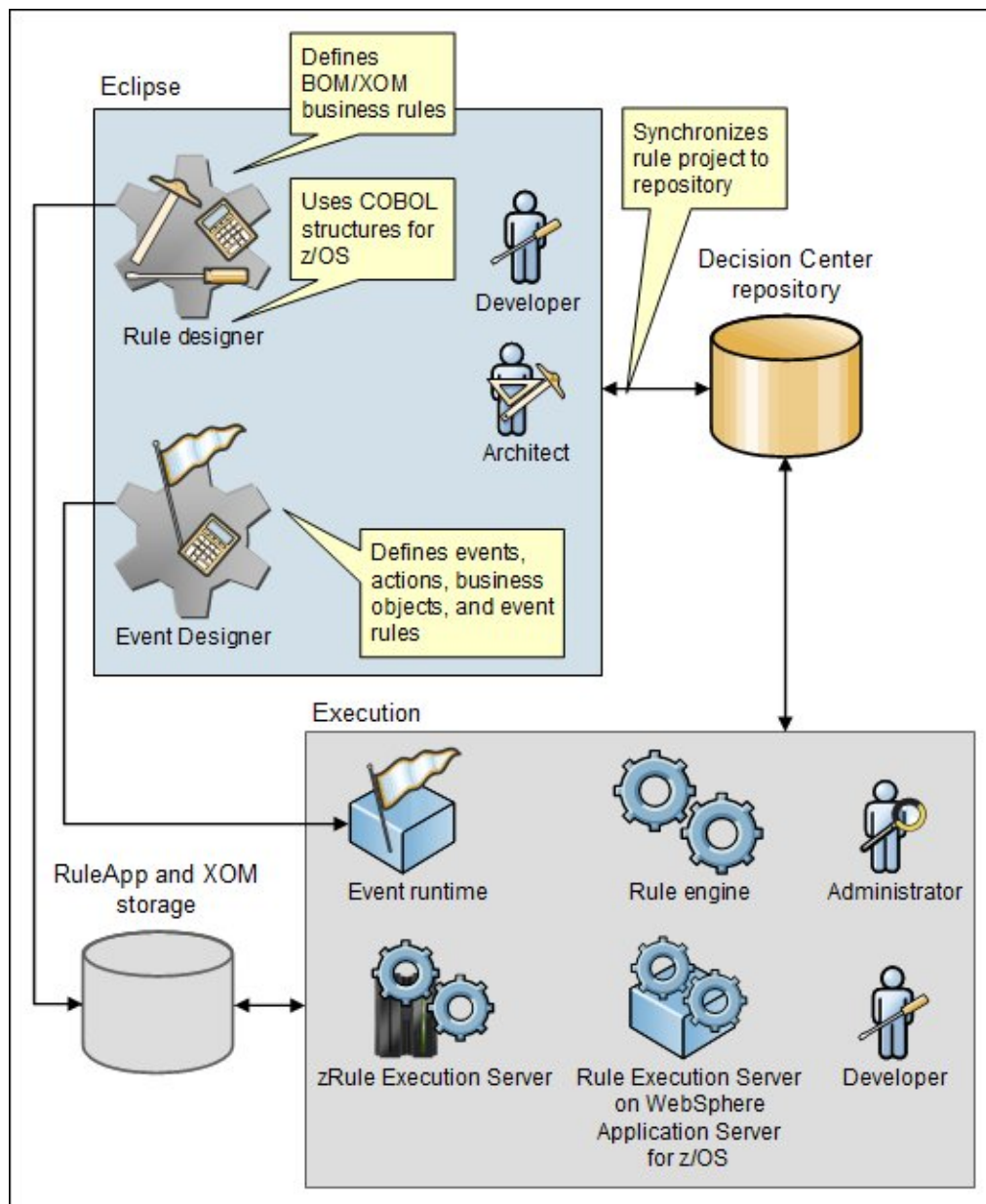

Figure 3. Operational concept

Usage scenarios

We can use a fictional insurance company to illustrate how operational decision management can be implemented in an existing core CICS and batch COBOL business application.

When a customer contacts the insurance company, the company needs to provide greater agility to sense, respond to, and decide when and what to do, In addition, the company currently is unable to detect when the same customer or household contacts it from multiple channels of the company. This issue

causes customer dissatisfaction, as well as many fraud situations of multiple requests for quotes from the same customer or household.

There are disparate business applications that manage customer channels. The call center uses a web application; the branch offices use a CICS application to manage the insurance company's claims business processes. The insurance company initiated an application modernization project to focus on its business decisions that relate to customer contact within these channel applications.

The use of business rules ensures more consistent results and can detect fraud when a customer household submits similar quote requests. Business rules for customer validation and fraud detection need to be shared across the applications. Business rules can be used for customer profiling: identify the customer, its products with the company, and the previous quotes provided to the customer on certain products.

Business Events in the CICS application and web applications can be used to identify whether there are similar requests for quotes and alert the insurance officer of possible fraud. The applications can reject a request for a quote if the number of events in a specific amount of time on the same product is reached.

WebSphere Operational Decision Management for z/OS is used for both the business rules and business events for the web and CICS COBOL applications to address the insurance company application modernization project, as shown in Figure 4.
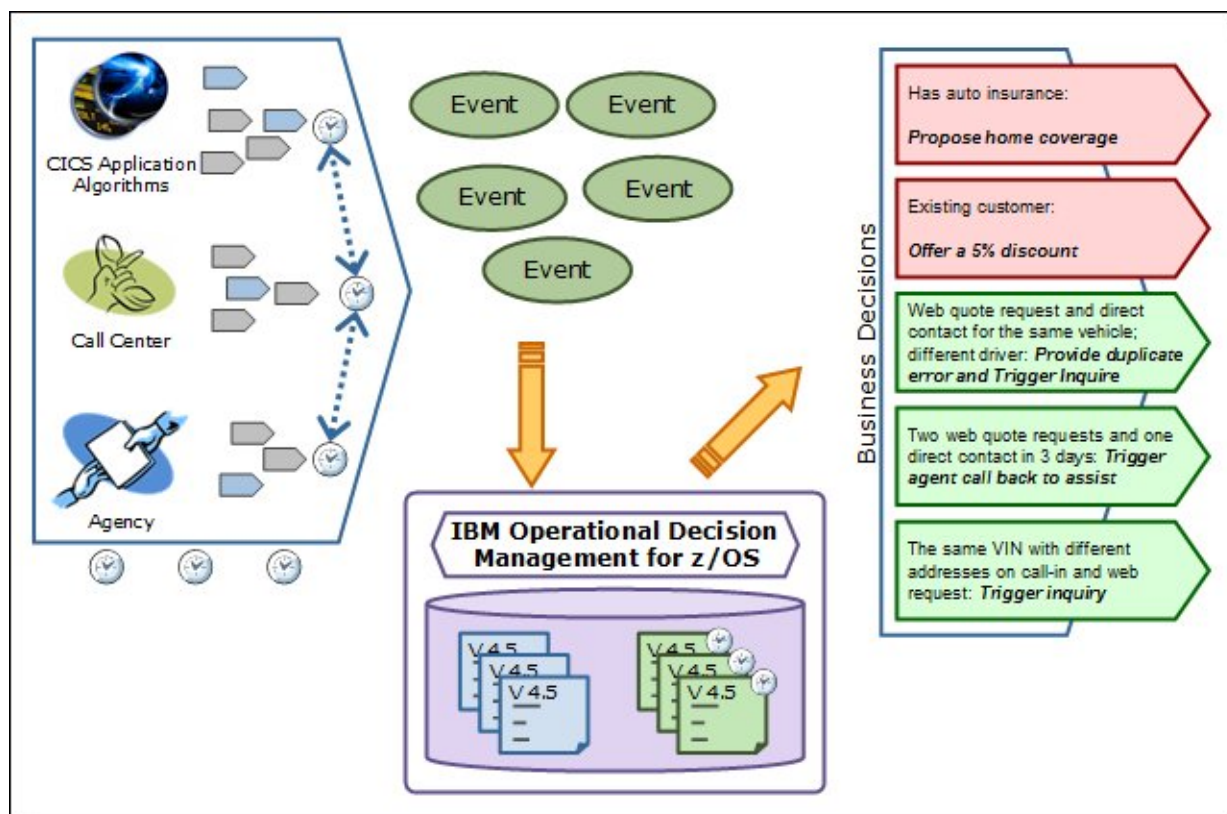

Figure 4. Insurance company application modernization project

Integration

WebSphere Operational Decision Management for z/OS can tightly integrate with CICS applications. For example, consider a request for quote scenario. The request for quote application running on CICS is designed to emit (create) a business event each time that a quote is requested.

Using this event, WebSphere Operational Decision Management identifies the situation where a customer submits more than three requests for a quotation within the same hour. When this situation is identified, WebSphere Operational Decision Management generates an action that notifies the sales team to follow up with the customer to ensure that the policy is purchased.

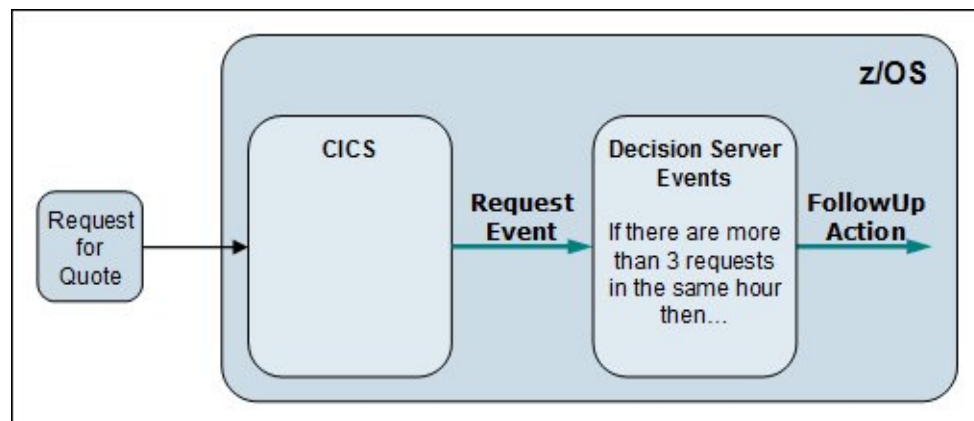Figure 5 shows the event processing overview for the request for the quote scenario.

Figure 5. Event processing overview for the request for quote scenario

Supported platforms

Visit the following websites for a complete detailed list of hardware and software requirements:

- IBM WebSphere Decision Server for z/OS V7.5
  http://www.ibm.com/support/docview.wss?uid=swg27023061

- IBM WebSphere Decision Center for z/OS, V7.5
  http://www.ibm.com/support/docview.wss?uid=swg27023060

- IBM WebSphere Business Rules for z/OS, V7.5
  http://www.ibm.com/support/docview.wss?uid=swg27023062

Ordering information

Ordering information is show in Table 1.

Table 1. Ordering information

Program name	Program number
IBM WebSphere Operational Decision Management for z/OS V7.5.0	5655-Y07
IBM WebSphere Business Rules for z/OS V7.5.0	5655-ILG

Related information

For more information, see the following documents:

- IBM Redbooks: *Flexible Decision Automation for Your zEnterprise with Business Rules and Events*, SG24-8014
  http://www.redbooks.ibm.com/abstracts/sg248014.html

- IBM Redpaper: *Making Better Decisions using WebSphere Operational Decision Management*, REDP-4836
  http://www.redbooks.ibm.com/abstracts/redp4836.html

- WebSphere Operational Decision Management Information Center
  http://pic.dhe.ibm.com/infocenter/dmanager/v7r5/index.jsp

- IBM announcement letters and sales manuals
  http://www.ibm.com/common/ssi/index.wss?request_locale=en

  On this page, enter `WebSphere Operational Decision Management for z/OS`, and click **Search**. On the next page, narrow your search results by information type, geography, language, or all three options.

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